on the back of the neck. These fibres are either not present or not functional in all the cats examined.

The pilo-motor fibres from the seventh thoracic to the third lumbar nerves, supply a strip of skin about twelve cm. wide, extending down the middle of the back from the upper part of the thoracic region to a point some six cm. out on the tail.

The plan of innervation in this region is very interesting. It can be shown that stimulation of any spinal nerve root in this group causes horripilation along a strip of skin some ten cm. in length. Taking any two successive nerves the more caudal one innervates a strip of skin the beginning and end of which are about two cm. caudal of the strip innervated by the more cephalic nerve.

1. BECK, *Die Bestimmung der Localisation der Gehirn-und Rückenmarksfunctionen vermittelst der elektrischen Erscheinungen*, Centralbl. f. Physiol. 1890 IV 473.

2. FLEISCHL v. MARXOW, *Mittheilung, betreffend die Physiologie der Hirnrinde*, Ibid. 1890 IV 537.

3. BECK, *Die Ströme der Nervencentren*, Ibid. 1890 IV 572.

4. GOTCH UND HORSLEY, *Ueber den Gebrauch der Elektricität für die Localisirung der Erregungserscheinungen im Centralnervensystem*, Ibid. 1891 IV 649.

5. DANILEWSKY, *Zur Frage über die elektromotorischen Vorgänge im Gehirn als Ausdruck seines Thätigkeitszustandes*, Ibid. 1891 V 1.

The above mentioned papers are experimental, polemical and historical. They have grown out of the question, how far the activity of the central nervous system is accompanied by demonstrable electrical changes, and to what degree these changes can be used for the study of localization of function in it. Gotch and Horsley stimulated the cerebral cortex and noted the electrical changes in certain tracts of the spinal cord.

The others have for the most part applied a peripheral stimulus and noted the electromotive changes in the brain, mainly in the cortex. From the results of all, it would appear that the cortex is usually active to such an extent that there are continuous and irregular electrical changes, which can not be accounted for by distinct peripheral stimuli. Peripheral stimuli produce more or less marked changes in the resting current taken from the cortex and there seems to be some relation between the disturbance in the several sensory cortical centres and stimulation applied to their appropriate sense organs, but it is far from precise or satisfactory. On the power of anæsthetics (chloroform and ether) to prevent these electromotive changes, the authors are not in accord, Beck claiming that the spontaneous activity of the cortex continues under choloform, while v. Marxow claims that the cortex is paralyzed by anæsthetics.

All those who have employed the "negative variation" as an instrument wherewith to attack physiological problems are aware that it is a hard one to handle, and whether it can be used to add to knowledge of the functions of the cerebral cortex remains yet to be shown.

STEWART, *Notes on some applications in physiology of the "resistance" method of measuring temperature, with special reference to the question of heat production in mammalian nerves during excitation*, Journal of Physiology, 1891, XII 409.

The apparatus used registered changes in temperature by the swing of a galvanometer needle and in most experiments variations of 0.0005° C. could have been detected with certainty. Neither in frogs nor dogs and rabbits is there evidence of a variation of the above mentioned amount

in stimulated nerves. Hence such temperature changes as accompany the excitation of living nerves in these animals must be extremely small, if they occur at all. Likewise, nerves in the process of dying fail to show a change of temperature.

As bearing on the question of "thermogenic" as distinguished from "motor" nerves, it appears that the temperature of a muscle poisoned with curara does not rise on stimulation of the nerve, indicating that not only do the nervous impulses causing contraction of the muscle, but also those causing rise of temperature, (and they may or may not be one and the same) fail to effect the muscle, after curara.

The Johns Hopkins Hospital Reports, 1891, II, No. 6. *Report in Neurology, I.*

1. BERKLEY.—A case of Chorea insaniens, with a contribution to the germ theory of chorea.
2. SIMON.—Acute angio-neurotic oedema.
3. HOCH.—Haematomyelia.
4. THOMAS.—A case of cerebro-spinal syphilis, with an unusual lesion in the spinal cord.

In the papers above cited, the clinical and pathological points of view, as contrasted with the anatomical, are most emphasized. It will therefore be sufficient to mention here a few facts of very general interest connected with them. The study of chorea (1) is based on two cases—one a dog. In the first case towards the end of life, the chorea was associated with mental confusion. The post-mortem appearances to which the most value is attached were in the meninges and vessels, and are interpreted as the result of the action of a pathogenic germ or its products. To the numerous small extravasation of red blood corpuscles found in the nerve substances, but little significence is attached. Towards the end of the paper the changes occuring in the liver and kidney in diphtheria, are compared with those in the meninges, brain and kidneys in chorea, with a view to emphasizing the similarities and thus furnishing indirect evidence for the germ theory of chorea.

The disease designated as acute angio-neurotic oedema (2) is characterized by rather circumscribed swellings, appearing suddenly and often periodically, usually multiple and affecting the eyelids, lips, hands, feet, genitals, and buttocks by preference. There is often profuse vomiting. Three cases are carefully described. Vaso-mator influences alone appear insufficient to explain all the results, but as the disturbance is credited to the sympathetic system, these vaso-motor influences must be considered as one factor at least.

In the discussion of Haematomyelia (3) it is pointed out that hemorrhage into the spinal cord, not produced by trauma, is very rare. In the two cases described, while trauma is by no means excluded, yet the paralysis did not appear in one case until six days, and in the other until three weeks after the accident. The particular muscles affected were carefully studied, and from the probable location of the lesion the spinal centres for these several muscles is inferred, the inferences being controlled by what is already established in the localization of arm centres in the cord.

Dr. Thomas's case (4) yields the following anatomical summary. "Syphilitic orchitis. Syphilitic endarteritis (gumnatous) of cerebral arteries. Gumma on left third nerve involving crus. Gummata on left fourth, right sixth, ninth and twelfth nerves, and in brain. Gumma on anterior roots of three cervical nerves. Meningitis of cord. Poliomyelitis of lumbar enlargement. Hyaline degeneration in the walls of the small arteries." In the faithful account, both clinical and anatomical, which is given there, are a number of interesting points. No symptoms